REMARKS

In an office action mailed on 05/31/2006, claims 34, 36-39 are objected to due to informalities; claims 34-36, 39-41 are rejected under 35 USC 103(a) as unpatentable over Wright (US5841468) in view of BuAbbud (US6460182) and Marin (US6501768).

Support for all of the material in the new claims may be found in the specification in numerous locations, for example in the Summary of Invention on pages 7-13. All of the claims are of a type of the elected species.

Claim 42 recites, inter alia, that the electrical up-converter increases the carrier frequency of received electrical signals by an amount that depends on the carrier frequency of the received electrical signals. Claim 42 also recites that the up-converted electrical signals are modulated onto light of different wavelengths and into different frequency bands each less than one octave wide. None of the cited references teach upconverting by an amount that depends on the carrier frequency of the received signals, nor do they teach using different frequency bands with different wavelengths of light to reduce SRS crosstalk.

In some cases, the carrier frequency of received electrical signals is increased by a factor of approximately two when the carrier frequency of the received electrical signals is below 100MHz and the wavelength of the optical signal to which the received electrical signal is converted after up-conversion is between 1220nm and 1360nm, or between 1480nm and 1620nm (Claim 44). This is not taught anywhere in the cited references, nor in references previously cited (e.g. Pigeon, US5153763).

In some cases, the carrier frequency of the received electrical signals is increased by a factor of approximately 40 when the carrier frequency of the received electrical signals is approximately between 5 and 65MHz (Claim 45). Again, this is not taught by any reference cited now or previously.

The present claims recite that the optical apparatus may divide up the frequency bands among different optical outputs. (See Claim 46). For example, the optical apparatus may provide multicarrier modulated optical output signals within a first frequency band of approximately 200-800MHz on a first optical output and multicarrier modulated optical output signals within a second frequency band of approximately 300-1200MHz on a second optical output (See Claim 47). Alternatively or in addition, the optical apparatus may provide multicarrier modulated optical output signals within a first frequency band of approximately 400-600MHz on a first optical output and multicarrier modulated optical output signals within a second frequency band of approximately 600-900MHz on a second optical output (Claim 48). These features are unique to the claims and not taught by any of the references.

Claim 49 recites, inter alia, converting the frequency of carriers in a first received multicarrier signal to a first frequency band, and converting the frequency of carriers in a second received multicarrier signal to a second frequency band, where the minimum frequency of any carrier in the second frequency band is at least two times higher than the maximum frequency of any carrier in the first frequency band. The multicarrier signals are then combined into a single multicarrier signal.

None of the cited references teach the recited carrier band separation between upconverted, multiplexed, multicarrier signals.

In some cases, the minimum frequency of the carriers in the second band is above 200MHz, and the maximum frequency of the carriers in the first band is below 100MHz (Claim 56). In some cases, the minimum frequency of the carriers in the second band is above 300MHz and the maximum carrier frequency of carriers in the first band is below 65MHz (Claim 57). These subcarrier allocations do not appear in any of the cited references.

In some cases, a first carrier of the first frequency band is upconverted to occupy a first sub-band of the first frequency band; a second carrier of the first frequency band is upconverted to occupy a second sub-band of the first frequency band. In this case the

bandwidth of the first sub-band is greater than one octave, and the bandwidth of the second sub-band is less than one octave (Claim 50).

None of the references teach this sub-band bandwidth allocation scheme.

In some cases, the bandwidth of the first sub-band may be greater than three octaves, and the bandwidth of the second sub-band may be less than one half of an octave (Claim 51), for example the first sub-band of the first frequency band may be the range of 5-65MHz, and the second sub-band in the range of 400-650MHz (Claim 52). Again, none of the references teach this sub-band allocation scheme.

In some cases, the carriers are upconverted so that, once modulated, they occupy sub-bands where the minimum frequency of the first <u>sub-band</u> (not the carrier frequency, but rather the carrier and sidebands) is more than two times higher than the maximum frequency of the second <u>sub-band</u> (Claim 53). In some cases, the minimum frequency of the first sub-band is more than six times higher than the maximum frequency of the second sub-band (Claim 54). None of the references teach this sub-band allocation scheme.

In some cases, the bandwidth of the first sub-band is greater than one octave, and the bandwidth of the second sub-band is less than one half an octave (See Claim 55).

In view of the above amendments and remarks, applicant believes that this application is now in condition for allowance. Applicant respectfully requests that a Notice of Allowability be issued covering the pending claims. If the Examiner believes that a telephone interview would in any way advance prosecution of the present application, please contact the undersigned.

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